

## CLAIMS

5 1. An inlet arrangement for inserting a preform (3')  
 into a furnace (1') for drawing a fiber (2'), which  
 furnace is of the type including an enclosure (4') at the  
 top of which there are both an opening to allow insertion  
 of a preform which moves vertically downwards in  
 translation during fiber drawing, and a preform inlet  
 arrangement (13') comprising both an injector (6')  
 situated at the level of the preform inlet opening to  
 10 inject inert gas onto the perimeter of the preform to  
 fill the enclosure of the furnace, and at least one seal  
 (17B) fixed by means of a seal support above the injector  
 and designed to allow the preform to pass therethrough  
 with the cylindrical main body (9') of the preform being  
 15 surrounded to prevent gas circulating between the  
 surrounding environment and the inside of the furnace at  
 the level where the seal is situated, said inlet  
 arrangement being characterized in that it further  
 comprises an airlock (13) for closing and sealing the top  
 20 of the furnace, above the injector, whether a preform is  
 present or absent, and for maintaining a positive  
 internal inert gas pressure at the furnace inlet to  
 prevent the surrounding entering at that level.

25 2. An inlet arrangement according to claim 1,  
 characterized in that it includes an airlock (13)  
 including:

- a closure member (16) above the injector (6') to  
 enable the preform body to be lowered into the enclosure  
 of the furnace when it is open and to close and seal the  
 30 top of the furnace above the injector when it is closed  
 in the absence of a preform at its level; and
- an airlock chamber defined longitudinally by two  
 stages of seals (17A, 17B) in which the body of a preform  
 can slide in a sealed manner, said chamber fulfilling a  
 35 furnace airlock function in conjunction with the seals of  
 at least one stage of the closure member as soon as a

preform is present at the level of at least one of said stages, which it closes, and the length of the body (9') of the preform is greater than or at least equal to a maximum preform drawing operating limit "lmin".

5 3. An inlet arrangement according to claim 2, wherein the distance between the stages of seals of its airlock is related to a minimum length that corresponds to a maximum preform operating limit "lmin".

Sub A1 10 4. An inlet arrangement according to any one of claims 1 to 3, wherein the injector has inert gas injector vents (15) which point towards its airlock in addition to injector vents (14) which point towards the inside of the furnace.

15 5. An inlet arrangement according to any one of claims 1 to 4, wherein at least one of the stages of seals is made up of stacked graphite seals (17A and/or 17B).

6. An inlet arrangement according to claim 5, wherein the seals are cooled to prevent premature deterioration.

Sub A2 20 7. A furnace for drawing fiber (2') including an enclosure (4') at the top of which is an opening to allow insertion of a preform, which moves vertically downwards in translation during fiber drawing, and a preform inlet arrangement (13') above the enclosure and including an injector (6') situated at the level of the preform inlet opening to inject inert gas onto the perimeter of the preform to fill the enclosure of the furnace, and at least one seal (17B) fixed by means of a seal support above the injector and through which the preform passes, whose cylindrical main body (9') it surrounds to prevent  
25 circulation of gas between the surrounding environment and the inside of the furnace at its level, characterized in that said furnace includes an inlet arrangement  
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according to any one of claims 1 to 6.

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